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THE RELATION BETWEEN PRODUCTION, PRICES AND ACREAGE
OF POTATOES ON THE EASTERN SHORE OF MARYLAND

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L. H. Bean, Senior Agricultural Economist,
Division of Statistical and Historical Research

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The following is an abstract of talks delivered before potato growers, dealers and bankers on the Eastern Shore of Maryland during October and November 1929.^{1/} The purpose of these addresses was to acquaint those interested in the current potato situation with some of the basic facts of production, prices and acreage changes of recent years and to draw from these facts such tentative conclusions concerning prospects for 1930, as would help producers to determine their acreage policies next spring.

The main conclusion that may be drawn from these facts is that the prices received by growers this year and the probable price situation at planting time is likely to lead to a general increase in acreage in Maryland as well as in the other early potato producing areas and unless this increased acreage is offset by lower yields the larger production in 1930 would bring prices not as high as in 1929. This applies to Maryland as well, for its prices are dependent on the general level of prices paid for early potatoes.

Another factor of considerable importance in determining the return to Maryland producers is the rate of marketings from competing areas. Heavier than normal shipments from other early producing sections when Maryland potatoes are being marketed in July and August prevent Maryland growers from receiving as much as the general supply conditions would warrant and lighter competing shipments result in better prices. The alternate years 1923, 1925, 1927 and 1929 were years of early marketings and light competition in July and August with Maryland potatoes. The alternate years 1924, 1926 and 1928 were years of delayed shipments and heavier than usual competition in July and August. Whether in 1930 competition will again be greater than usual is not definitely predictable since that will probably depend on weather, price and other factors which control the earliness or lateness of marketing.

^{1/} Meetings of the Interstate Early Potato Committee with growers, dealers, cooperatives, bankers and supply agents, October 8-9, Pocomoke City, Snowhill, and Princess Anne, Md. On November 21, meeting of Tri-County Bankers Association, Sharptown, Md.

I. Variations in acreage, yield, production and prices of potatoes on Eastern Shore of Maryland

The record of changes in acreage, yield, production and prices of potatoes on the Eastern Shore of Maryland for the past eleven years is shown in Figure 1.

The acreage record shows four distinct characteristics, an upward trend to 1924, a reduction in 1925, further increases to 1928 and another reduction in 1929. The record of yields reveals two 3-year periods of high yields per acre, 1920-22 and 1927-29, and a four year period of low yields, 1923-26. The production record shows a falling off from 1922 to 1925 because of low yields and the reduced acreage of 1925, a record crop in 1928 as a result of successive increases in acreage and high yields followed by a considerable reduction in 1929. The price record, the most irregular of the four series shows that the highest prices received by growers during the period 1921-1929 came in 1923 and the lowest in 1928. The variations in prices from year to year appear to be related to other factors than the production in Maryland. This is inferred from the fact that with practically no increase in Maryland production between 1923 and 1924 prices dropped from over \$1.50 per bushel to less than 60 cents. Two of the major factors influencing the price received by Maryland producers are contained in Figure 2.

II. The relation between prices on Eastern Shore, Maryland and

- (1) prices in ten early producing States, and
- (2) July and August shipments from competing areas

The chief factor responsible for the yearly changes in prices received by Maryland potato growers appears to be the general early potato situation. It can be shown that the prices received by growers in the ten early potato producing States south of Maryland depend upon their production and on the carryover or prices of potatoes of the preceding late crop of the northern and western States.^{1/} In Figure 2 can be seen how closely the Maryland price is a reflection of the general situation. Usually the Maryland price is below the general average except in 1925 and 1929. Were the general situation the only element influencing the Maryland price one might expect the Maryland price to remain below the general average (which includes the higher prices received for the Florida and Carolina crops) by a constant amount each year. But that difference is sometimes greater as in 1924, 1926 and 1928 and sometimes less as in 1923, 1925 and 1929.

These margins or differences are shown in the upper (right) section of Figure 2 where the Maryland price has been expressed as a per cent of the general price for the ten early States, so that in 1925 and 1929 the Maryland price was practically 100 per cent of the general average and in 1924, 1926 and 1928 it was less than 60 per cent of the average.

^{1/} See Applications of a Simplified Method of Correlation, mimeographed report, Bureau of Agricultural Economics, Part I, Case 1.

One of the chief reasons why the Maryland price does not bear a constant relation to the general average appears to be the variations in the amount of competition from the States south of Maryland that are still marketing potatoes in July and August. Of course, the bulk of competition comes from Virginia. This factor is an important element in the general average price and its influence on the Maryland price has already been taken into account (by the device of expressing the Maryland price as a percentage of the average). But another competing influence is the volume of shipments from areas outside of Virginia. Taking the shipments from North Carolina alone for the months of July and August as an indicator of this additional competition, it is found that delayed marketings from this area in 1924, 1926 and 1928 left around 1,500 cars to be shipped in July and August, while earlier marketings in other years left less than 500 cars for July and August. It is apparent that in the years of lighter shipments from North Carolina, Maryland producers received between 80 - 100 per cent of the general average prices but in years of heavy shipments received only 50 - 60 per cent of the general average.

From these two illustrations in Figure 2 it may be concluded that the price in Maryland in 1930 will be dominated very largely by the production in other early producing States and by the rate of marketings from competing areas. On the latter point no adequate data are yet available to form a satisfactory guess other than the fact that heavy shipments from North Carolina have recently come in alternate years, the latest year being 1928. Concerning the other important factors, namely the probable volume of production of early potatoes and the probable influence of the carryover from the late crop, there are certain indications of importance, chief of which is the prospective potato acreage in the early States.

III. The relation between prices and subsequent changes in potato acreage in Maryland

Potato growers throughout the country tend to increase their acreage after a year of high or profitable prices and to decrease after a year of low prices. In some areas the influence of low prices tends to restrict acreage for more than one year and in other areas the price at planting time is an additional factor making for an increase or decrease in acreage. In this response to past and current prices instead of conditions that may prevail at harvest time, potato growers are not unlike other farmers such as cotton growers or hog producers, for among them, too there is a general tendency to base their plans on what has happened instead of on the more reasonable basis of what is likely to happen.

The nature of this response on the part of Maryland potato growers is illustrated in Figure 3. In the upper section are shown the year to year changes in potato acreage on the Eastern Shore, the zero line representing the preceding year's acreage. Thus the reductions in acreage in 1925, and 1929 depicted in Figure 1 are here shown below the zero line as a negative quantity and the yearly increases are shown as positive items above the zero line.

These variations in acreage when related to prices indicate that Maryland growers have in recent years been influenced to quite an extent by prices received for the preceding year's crop and by prices prevailing at planting time. The nature of these two influences is shown graphically in the lower half of Figure 3, where the zero line as before represents the preceding year's acreage, increases and decreases being measured respectively above or below the line. The price scale is measured off horizontally.

Noting first the influence of price received for the preceding year's crop, it appears that around \$1.00 per bushel there is little temptation to expand or cut acreage. A low price of 60 cents or less has tended to reduce acreage by 1,000 acres. A relatively high price of \$1.25 per bushel or more has tended toward an increase of 700 to 800 acres.

In addition to this price influence there has also been a somewhat similar effect of prices at planting time (as indicated by prices at New York in February and March). Prices at New York below \$1.25 per bushel have tended to restrict acreage, the reduction amounting to 2,000 acres for a very low price of 75 cents per bushel at planting time. Prices above \$1.60 have tended toward an increase of 1,000 to 1,200 acres.

If growers this year again respond to past prices as they have done in recent years, will they further cut or increase their acreage in 1930? The price-acreage curves in Figure 3 contain the answer, which may be obtained thus: Maryland growers received in 1929 a price of about \$1.30 per bushel. According to the solid curve, the effect of this price for the preceding crop is an increase of about 700 acres. The influence of prices at planting time can not be stated as definitely because it is not definitely known what the potato price situation will be at that time. New York prices are now at least \$1.50 per bushel. According to the monthly price situation report of the U.S. Department of Agriculture, they are not expected to average lower but possibly higher after January. Prices at New York \$1.50 or better at planting time would indicate an additional acreage increase of around 1,000, making a total of 1,700 acres above that of last year. This estimate for 1930 based on the indicated response of growers in the past few years is shown in the upper half of Figure 3 by the dotted line. Similar estimates have been made for each of the years since 1924 and they agree very closely with the actual changes that took place. The 1930 increase may of course be more or less than that indicated by the 1929 price situation but already Maryland growers have reported to the U.S. Department of Agriculture that they intend to plant 12 per cent more than last year, or an increase for the Eastern Shore of Maryland of nearly 1,400 acres.

IV. Prospects for 1930

In determining what potato acreage to plant on the Eastern Shore of Maryland next spring, the following facts among others should be taken into account.

1. Price-average studied for the Southern States similar to that described for Maryland indicate average increases for 1930. According to reports from growers on intentions to plant, these increases may total to 12 per cent above last year's acreage.

2. With yields averaging the same as last year the total production would be greater in 1930 than in 1929 and the general level of early potato prices would average less than \$1.30, the price for the 1929 season.

3. Should there be a reduction in yields from the high yields of the past three years it would tend to offset in part the increased acreage, and prices would then average only slightly below last year's average.

4. Another sustaining factor may be the higher level of prices of late crop potatoes than those which prevailed last spring, provided Northern growers do not store too heavily in anticipation of higher prices next spring.

5. The trend in the general business situation in the past few months if continued into next spring might result in a curtailment of consumer purchasing power so as to affect adversely the price that dealers will be willing to pay for early potatoes.

6. In addition to these general prospects, Maryland producers should bear in mind the possibly greater competitive influence from the Southern States than that which prevailed in 1929.

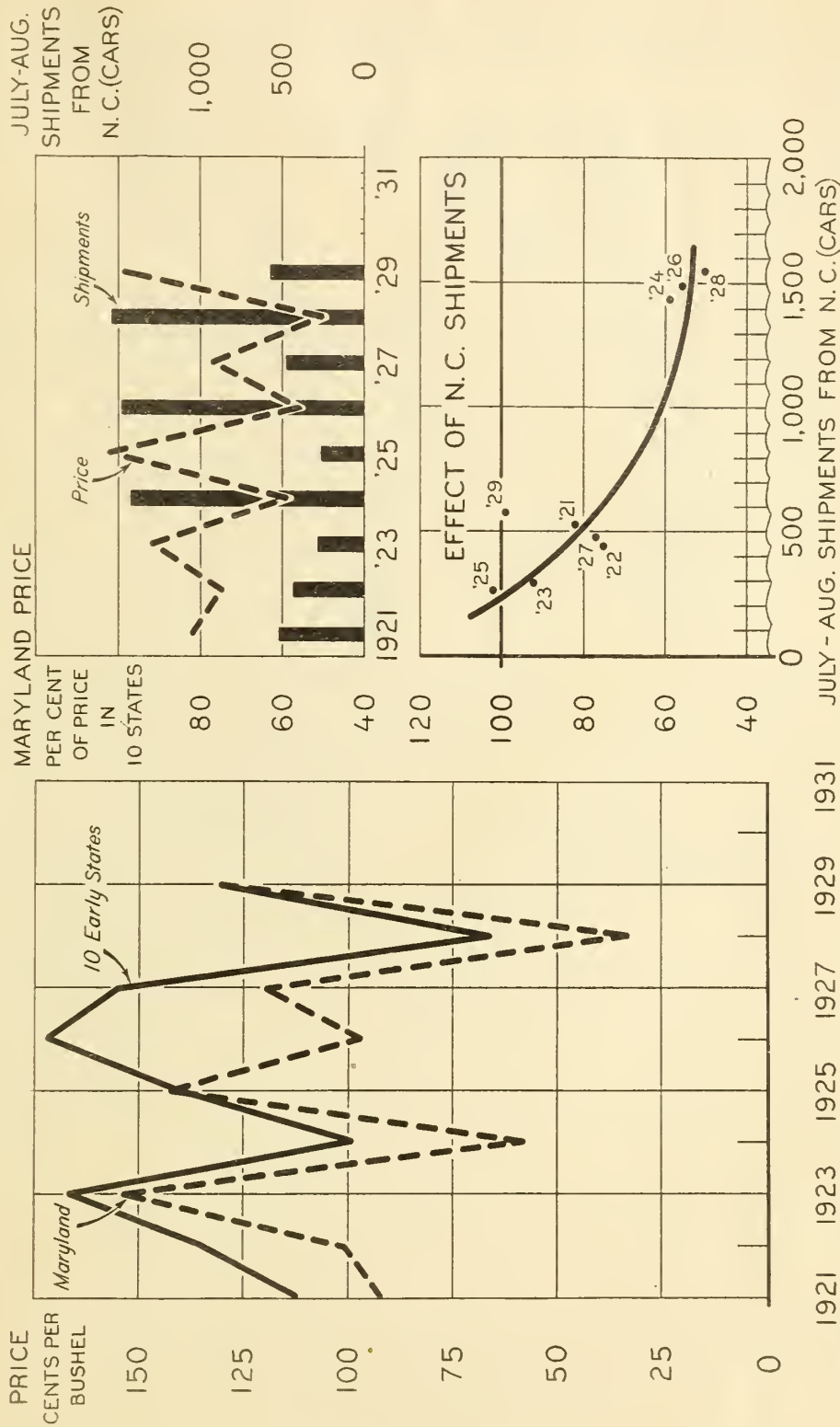
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POTATOES: ACREAGE, YIELD, PRODUCTION, AND PRICE EASTERN SHORE, MARYLAND



Figure 1

POTATOES: PRICES RECEIVED ON EASTERN SHORE, MARYLAND AND IN 10 EARLY STATES AND JULY AND AUGUST NORTH CAROLINA SHIPMENTS



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Figure 2.

POTATOES: RELATION BETWEEN PRICE AND ACREAGE CHANGES, EASTERN SHORE, MARYLAND

